

Delta Shipyard Waste Pit Sampling Results

There were four waste pits documented at the Delta Shipyard Site identified in the Wink Engineering Report in 1985. Three pits are east of the plant shell road located on property identified as Delta Mud (Attachment 2) and one pit west of the plant shell road on property identified as Delta Shipyard (Attachment 1). Both attachments identify the location of where all four of the pits were sampled. The results from the sampling of the pits east of the plant shell road were:

Parameter	Maximum	
	Result	Unit
Oil and Grease	331,000	mg/kg
Phenol	3.0	mg/kg
Ethylbenzene	0.99	mg/kg
Chlorobenzene	0.2	mg/kg
Toluene	1.43	mg/kg
Total Xylene	10.6	mg/kg

All four ponds were sampled again in 1994 and the results were documented in the "Site Inspection Prioritization Report and Prescore Package Delta Shipyard Phase III, December 1994", conducted Roy F. Weston, Inc. for EPA Region 6. A limited number of pit sludge and drainage ditch sediment samples were collected in and around the pits. The sludge samples collected from the exposed pits indicated the presence of volatiles, semivolatile organics, pesticides, and metals. Sediment analytical results meeting HRS observed release criteria of three times background included benzene, ethylbenzene, xylenes, 2-methylnaphthalene and polycyclic aromatic hydrocarbons (PAHs). Figure 6 of the report shows the sampling locations. Listed below are the results from the pits east of the plant shell road (Pit 1-3)

Parameter	Maximum	
	Result	Unit
Benzene	0.073	mg/kg
Ethylbenzene	0.170	mg/kg
Toluene	0.043	mg/kg
Total Xylene	0.240	mg/kg
2-Methylnaphthalene	47	mg/kg
Acenaphthene	1.8	mg/kg
Anthracene	0.54	mg/kg
Benzo(a)anthracene	0.44	mg/kg
Benzo(a)pyrene	0.43	mg/kg
Benzo(g,h,i)perylene	0.43	mg/kg
Benzo(b)fluoranthene	0.30	mg/kg
Benzo(k)fluoranthene	0.43	mg/kg
Chrysene	1.2	mg/kg
Fluorene	5.1	mg/kg
Naphthalene	11	mg/kg
Phenanthrene	8.8	mg/kg

Pyrene	0.740	mg/kg
4,4-DDD	0.035	mg/kg
Heptachlor epoxide	0.025	mg/kg
Methoxchlor	0.069	mg/kg

In 1996 EPA conducted and Expanded Site Inspection of the Delta Shipyard Site. As part of the investigation EPA collected 7 pit sludge samples. The pit sludge sample results indicated elevated concentrations of 2-methylnaphthalene, naphthalene, phenanthrene, ethylbenzene, toluene, xylenes, chromium, barium, lead, and zinc. Of these, the highest concentrations were the PAHs and barium.

Parameter	Maximum Result	Unit
Ethylbenzene	9.0	mg/kg
Toluene	7.4	mg/kg
Total Xylene	59	mg/kg
2-Methynaphthalene	470	mg/kg
Naphthalene	160	mg/kg
Phenanthrene	79	mg/kg
Endosufan II	0.089	mg/kg
Heptachlor epoxide	0.110	mg/kg

In 2013 a Removal Assessment Report was completed by Weston Solutions for EPA. The waste source sample results indicate that PCBs, PAHs, and TCL VOCs exceed EPA Site-Specific Action Levels - EPA industrial Regional Screening Levels (RSLs). Specifically, PAH including naphthalene (up to 188 mg/kg); and TCL VOCs including ethyl benzene (up to 6.48 mg/kg). The results were not screened against ecological criteria.

Parameter	Maximum Result	Unit
Benzene	1.01	mg/kg
Ethylbenzene	6.48	mg/kg
Toluene	7.45	mg/kg
Total Xylene	34.6	mg/kg
2-Methynaphthalene	612	mg/kg
Acenaphthene	19.1	mg/kg
Dibenzo(a,h)anthracene	0.075	mg/kg
Benzo(a)pyrene	0.22	mg/kg
Benzo(b)fluoranthene	0.34	mg/kg
Naphthalene	593	mg/kg
Phenanthrene	103	mg/kg
Pyrene	3.41	mg/kg
4,4-DDE	0.0341	mg/kg
Aroclor-1254	0.259	mg/kg